LOUISVILLE - JEFFERSON COUNTY METRO GOVERNMENT
AIR POLLUTION CONTROL DISTRICT
850 Barret Ave., Louisville, Kentucky 40204
30 January 2004

TITLE V PERMIT SUMMARY

Company: AKZO Nobel Resins

Plant Location: 4730 Crittenden Dr. Louisville, KY 40233-7510

Date App. Received: 22 April 1997; Revised Initial 25 April 2000

Date Admin. Complete: 12 May 1997

District Engineer: Chris Bryant **Permit No.:** 120-97-TV (R1)

Plant ID: 0185 **SIC Code:** 2851/2821 **NAICS:** 325211/32551 **AFS:** 00185

Introduction:

This permit will be issued pursuant to: (1) District Regulation 2.16, (2) Title 40 of the Code of Federal Regulations Part 70, and (3) Title V of the Clean Air Act Amendments of 1990. Its purpose is to identify and consolidate existing District and Federal air requirements and to provide methods of determining continued compliance with these requirements.

Jefferson County is classified as an attainment area for sulfur dioxide (SO_2), nitrogen oxides (NO_x), carbon monoxide (CO), particulate matter (PM), particulate matter less than 10 microns (PM_{10}), and lead (Pb); unclassifiable for particulate matter less than 2.5 microns ($PM_{2.5}$); and is a moderate non-attainment area for ozone (O_3).

Application Type/Permit Activity:

[ ] Initial Issuance
[ ] Permit Revision
    [X] Administrative
    [ ] Minor
    [ ] Significant
[ ] Permit Renewal

Compliance Summary:

[X] Compliance certification signed [ ] Compliance schedule included
[ ] Source is out of compliance

I. Source Description

1. Class I Area Impacts: This source is not located in or near a Class I area.

2. Product Description: AKZO Nobel manufactures synthetic resins including Acrylic, Alkyd, Polyester, Amino and Copolymer under SIC Code 2821 and specialty coatings under SIC code 2851 (paints, varnishes, lacquers, enamels and allied products).

3. Overall Process Description: Liquid raw materials such as solvents, acids, oils, and polyols are used in the production of resins. Bulk liquid raw materials are stored in outdoor above-ground storage tanks. Raw solid materials are received in drum quantities and stored in the onsite raw material warehouse. The resin manufacturing process essentially consists of mixing solvents, monomers, and catalysts in a reactor. The contents of the reactor are heated to a set point temperature for a specified length of time to achieve a complete reaction. The resin is transferred to a thindown tank where additional solvent is added to adjust product quality. The resin is filtered and transferred to tank wagons, storage tanks or 55 gallon drums. A small portion of the Louisville facility , the PD2 building, is devoted to the production of specialty coatings. Raw materials include solvents, resins, pigments, and additives. The process includes premix, pigment grinding and dispersing, thindown and product fill-off.

4. Site Determination: There are no other facilities that are contiguous or adjacent and under common control.

5. Emission Unit Summary:

a. **Resin Production:** AKZO operates a total of six resin reactors for manufacturing various types of synthetic resins. Reactors K4, K5, K6 and K8 are subject to District Regulations 5.11, 5.12, 5.14, 6.09, and 6.24. District Regulation 6.24 limits the VOC emissions for each emission unit to 8 lb/hr and 40 lb/day for Class II solvents or 450 lb/hr and 3,000 lb/day for Class III solvents. District Regulation 6.09 limits the particulate emissions for each emission unit to 2.58 pounds per hour.
Reactors K9 and K10 are subject to the requirements of District Regulations 5.12, 5.14, 7.08 and 7.25. District Regulation 7.25 limits the VOC emissions for these reactors to 5 tons per year or BACT level of control. The condensers utilized to control the VOC emissionss from reactors K9 and K10 are
are considered BACT. Reactor K6 (U3) is subject to 40 CFR Part 63 Subpart OOO which regulates the emissions of HAPs from amino resin manufacturing. VOC emissions from resin production are controlled using shell-and-tube type condensers and particulate emissions are controlled by wet scrubbers. To assess the performance of the control devices, daily parametric monitoring and maintenance checks will be required to assure the devices are operated in a manner to reasonably assure compliance with the emission limits established in the permit.

b. **PD2 Coating Manufacturing:** The coating manufacturing process includes dispersion tanks, thindown tanks, sandmills, and a filtering and filling system. Emissions from these sources primarily result from vapor displacement and surface evaporation of VOC due to tank charging and cleaning. The PD2 process is subject to District Regulations 5.11, 5.12, 5.14, 6.09, 6.24, 6.43, 7.08 and 7.25. The PD2 coating manufacturing facility is subject to the emission limitations in District Regulation 6.43 which limits VOC emissions to 9.10 tons per month. The company must maintain records of the daily production rate and total daily VOC emissions. Particulate emissions from this facility are controlled using fabric filters. To assess the performance of the baghouses, daily parametric monitoring and maintenance checks will be required to assure the devices are operated in a manner to reasonably assure compliance with the emission limits.

c. **Loading Facility:** This area is specifically used for loading and unloading resin products and organic compounds into tanks, tank trucks, and drums. Emissions generated in this area are working losses due to the loading and unloading of product into each vessel. This emission unit is subject to the requirements of District Regulations 5.11, 5.14, and 6.22. The loading facility is permitted for less than 20,000 gallons per day.

d. **Raw Material Storage:** AKZO Nobel operates storage tanks to store raw materials. VOC/TAP emissions from the storage tanks result from working and breathing losses associated with each tank. Thirty three of these tanks are subject to District Regulations 5.11, 5.14, and 6.13. One tank stores formaldehyde and is subject to regulations 5.12, 5.14, 7.12 and 40 CFR Part 60, Subpart K_b.

e. **Finished Product Storage:** AKZO operates storage tanks to store finished products. Emissions are generated the same as described for raw material storage. These storage tanks are subject to District Regulations 5.11, 5.14, and 6.13.

f. **Wastewater Treatment Facility:** VOC and TAP emissions are generated from the treatment of wastewater. Emission rates are calculated using approved EPA software such as TANKS 3.0 and WATER 8. This facility is subject to Regulations 5.12, 5.14, and 7.25. VOC emissions are controlled by a condenser following the Macro Pulse Polymer unit which is considered BACT level of control.

g. **Solvent Recovery Unit (SRU):** The solvent recovery unit is used to recycle solvent to be used in coating production. Emission factors used to calculate VOC emissions from the SRU are based on stack test data. The SRU unit is subject to District Regulations 5.12, 5.14, and 7.25. The SRU utilizes BACT level of control.

h. **Drum Filling Facility:** This operation is specifically used for filling drum quantities of resin products and organic compounds. This facility is subject to the requirements of District Regulations 5.12, 5.14, and 7.25.

i. **Combustion Sources:** AKZO operates five natural gas only fired boilers. Three of the boilers serve a dual function, providing process heat to the resin kettles and providing space heat to the administrative offices and are subject to the requirements of District Regulation 7.06, which limits SO_2 emissions to 1.0 lb/MMBtu heat input and particulate emissions to 0.41 lb/MMBtu heat input. The two remaining boilers are hot oil furnaces used in the resin manufacturing process to generate heat for the resin cooking and solvent reclaiming process. The three dual purpose boilers have a heat input capacity of 10.46 MMBtu/hour each and may combust natural gas only. 40 CFR Part 60, Subpart Dc does not apply to any of these boilers because they were constructed prior to 17 August 1971**.**

6. Fugitive Sources: See the Title V permit application, section 2.2.

7. Permit Revisions:

Revision No.	Date of Reissuance	Public Notice Date	Proposed Date(s)	Emission Unit/Page No.	Description
Initial	10/5/2000	6/25/2000	8/18/2000	Entire Permit	Entire Permit
Rev 1	1/30/2004	NA	NA	Cover page, U3, U4, U7, U9, U12, and U18	Incorporating Construction permits 85-01, 125-02, and 126-02. Adding 40 CFR 63 Subpart OOO conditions, deleting unit U12 (Solvent recovery), and changing responsible official

a. Revision 1 was a administrative permit revision to add 40 CFR 63 Subpart OOO and 40 CFR 63 Subpart UU requirements, update the cover page with new government logo and title, changed responsible official, and add construction permits 125-02-C, 126-02-C, and 85-01-C for installation/modification of the following equipment E11 storage tank, E12 process tank, E13 process tank, E14 process tank, E15 K6 reactor, E31

process tank, E32 process tank, E51 filter press, E195-E200 storage tanks, and E210 process tank. Construction permits 125-02-C, 126-02-c, and 85-01-C were public noticed on 12 May 2002.

8. Title V Major Source Status by Pollutant:

Pollutant	Actual Emissions (tpy) 2001 Data	Major Source Status (based on PTE)
CO	6	No
NO_x	7.15	No
SO_2	0.04	No
PM/PM_{10}	0.69/0.5	No
VOCs	34.24	Yes
Single HAP (> 1 tpy)		
Ethyl benzene	3.22	No
Toluene	1.67	No
Xylene	12.42	Yes
Total HAPs (VOC and Non-VOC)	17.91	Yes

9. MACT Standards: This plant is a major source for HAPs. Emission Unit U3 manufactures amino resins and is subject to 40 CFR Part 63 Subpart OOO - Amino/Phenolic Resin Manufacturing.

10. Applicable Requirements:

[ ] PSD	[X] NSPS	[X] SIP	[ ] Other
[ ] NSR	[ ] NESHAPS	[X] District-Origin	[X] MACT

11. Referenced Federal Regulations in Permit:

40 CFR Part 60 Subpart A	General Provisions
40 CFR Part 60 Subpart K_b	VOL Storage Tanks
40 CFR Part 63 Subpart A	General Provisions
40 CFR Part 63 Subpart OOO	Amino/Phenol Resin Manufacturing
40 CFR Part 68 Subparts A-H	Chemical Accident Prevention Provisions

II. Regulatory Analysis

1. Emission and Operating Caps: The source is not subject to any plant-wide emission or operating caps. The PD2 coating manufacturing facility is limited to 9.10 tons of VOC emissions per calendar month.

2. **Compliance Status:** The source signed and submitted a Title V compliance certification on 7 April 2003.

3. **Operational Flexibility:** The source did not request to operate under alternative operating scenarios in its Title V Permit Application.

4. **Testing Requirements:** See the specific emission units in the Title V permit for any testing requirements.

5. **Monitoring, Record Keeping and Reporting Requirements:** The source is required to monitor, maintain records of, and report on various operating parameters to demonstrate ongoing compliance with all applicable requirements. Compliance reporting is required semi-annually, except where underlying applicable regulations or permit conditions require more frequent reporting.

a. **Periodic Monitoring**

i. **Opacity**

1) **Emission Units U1, U2, U3, U4, U5, U6, U14** - The weekly/monthly visible emissions survey for Emission U1 through U6 and U14 should be adequate periodic monitoring to demonstrate ongoing compliance with the opacity standard. The source is required to initiate corrective action within 8 hours if visible emissions are observed during the survey. If visible emissions persist a Method 9 test is required. Because the particulate emissions are intermittent in nature, with a duration of 20-30 minutes during a 12 to 16 hour time period, it is highly unlikely there will be opacity problems associated with these emission units. These emission units have no history of compliance problems with the opacity standard. The periodic visible emissions surveys and Method 9 tests, if necessary, coupled with daily control device performance monitoring should be adequate monitoring to reasonably assure the source meets its opacity obligations for these emission units.

2) **Emission Unit U-15** - Periodic monitoring for the three (3) 10 MMBtu/hr natural gas only fired boilers shall consist of fuel records. The District believes it is highly unlikely, if not impossible, for this emission unit to violate the opacity standard, therefore, no periodic visible emissions surveys or Method 9 tests are required.

ii. **VOC**

1) **Emission Units U5, U6, U11, U12, U14, U16** - Periodic monitoring for these emission units consists of monthly record keeping of the quantity of each product manufactured, hours of operation, and VOC emissions. The District has determined that the monthly record keeping coupled with daily parametric monitoring of each control device is sufficient monitoring to demonstrate ongoing compliance with the annual VOC limits specified in District regulation 7.25.

2) **Emission Units U1, U2, U3, U4, U7, U9, U14** - Periodic monitoring for these emission units consists of daily record keeping of the quantity of each batch of resin manufactured, hours of daily operation, product formulation and parametric monitoring. The District has determined that the daily record keeping coupled with daily parametric monitoring of each control device is sufficient monitoring to demonstrate ongoing compliance with the VOC limits specified in District regulation 6.24.

iii. **Particulate Matter**

1) **Emission Units U1, U2, U5, U6, U14** - The company will perform daily record keeping of the quantity of each batch manufactured, hours of daily operation, batch formulation and parametric monitoring . The District has determined that the daily record keeping coupled with daily parametric monitoring of each control device is sufficient monitoring to demonstrate ongoing compliance with the PM limits for these emission units.

2) **Emission Unit U15** - The potential uncontrolled PM emissions, using the applicable AP-42 emission factors, demonstrate that the PM emission standards specified in Regulation 7.06 cannot be exceeded when combusting natural gas, therefore, no periodic monitoring is required.

iv. **Sulfur Dioxide**

1) **Emission Unit U15** - The potential uncontrolled SO2 emissions, using the applicable AP-42 emission factors, demonstrate that the SO2 emission standards specified in Regulation 7.06 cannot be exceeded when combusting natural gas, therefore, no periodic monitoring is required.

6. Off-Permit Documents: See Title V operating permit for listing of Off-Permit documents.

The District considers an "off-permit document" as a document on which a source's compliance with given regulation(s) is contingent or which contains regulatory requirement(s), but is only referenced in a source's Title V Operating Permit. The designation "off-permit document" shall be made at the District's discretion, and may include, but not be limited to, documents such as Regulation 1.05 VOC compliance plans, PMPs, MOCS; or other documents which are too voluminous to be included in a source's Title V Operating Permit, as determined by the District.

III. Other Requirements

1. Temporary Facilities: The source did not request to operate any temporary facilities.

2. Short Term Activities: The source did not report any short term activities.

3. Compliance Schedule/Progress Reports: The source has certified compliance with all applicable requirements; therefore, no compliance schedule or progress reports are necessary.

4. Emissions Trading: None.

5. Acid Rain Requirements: The source is not subject to the Acid Rain Program.

6. Stratospheric Ozone Protection Requirements: Title VI of the CAAA regulates ozone depleting substances and requires a phase-out of their use. This rule applies to any source that manufactures, sells, distributes, or otherwise use any of the listed chemicals. This source does not manufacture, sell, or distribute any of the listed chemicals.

7. Prevention of Accidental Releases 112(r): The source does manufacture, process, use, store, or otherwise handle one or more of the regulated substances listed in 40 CFR Part 68 Subpart F and Regulation 5.15, *Chemical Accident Prevention Provisions*, in a quantity in excess of the corresponding specified threshold amount; therefore, the source must comply with all applicable requirements in Regulation 5.15.

8. Insignificant Activities: The following activities, as referenced in the source's Title V permit application, have been determined by the District to be insignificant.

INSIGNIFICANT ACTIVITIES		
Description	**Quantity**	**Basis**
Storage tank (20,238 gallon diesel fuel)	1	Exempt, Regulation 2.02, section 2.3.9.2
Natural gas fired boilers	2	Exempt, Regulation 2.02, section 2.1.1
R & D facility	1	Exempt, Regulation 2.02, section 2.3.27

INSIGNIFICANT ACTIVITIES		
Description	**Quantity**	**Basis**
Internal combustion engines	7	Exempt, Regulation 2.02, section 2.2
Non-halogenated Cold solvent parts cleaners*	3	Exempt, Regulation 2.02, section 2.3.22

a. Insignificant Activities are only those activities or processes falling into the general categories defined in District Regulation 2.02, Section 2, and not associated with a specific operation or process for which there is a specific regulation. Equipment associated with a specific operation or process (Emission Unit) shall be listed with the specific process even though there may be no applicable requirements. Information contained in the permit and permit summary shall clearly indicate that those items identified with negligible emissions have no applicable requirements.

b. Activities identified In District Regulation 2.02, Section 2, may not require a permit and may be insignificant with regard to application disclosure requirements but may still have generally applicable requirements that continue to apply to the source and must be included in the Title V permit.

*i. Non-halogenated cold solvent parts cleaners shall be operated in compliance with all applicable sections of District Regulations 6.18 and 7.18, including Section 4 of each.

ii. No facility, having been designated as an insignificant activity, shall be exempt from any generally applicable requirements which shall include a 20% opacity limit for facilities not otherwise regulated.

iii. No periodic monitoring shall be required for facilities designated as insignificant activities.